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SOUTH AMERICA  
ANNUAL ADDRESS BY THE PRESIDENT  
GARDINER G. HUBBARD



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GARDINER G. HUBBARD.

(Presented to the Society December 12, 1890.)

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Two years ago I selected for my annual address *Africa, or the Dark Continent*; last year *Asia, the Land of Mountains and Deserts*; this year I have chosen *South America, the Land of Rivers and Pampas*.

The recent meeting of the Pan-American Congress has called attention to South America, a part of our continent under republican forms of government and rich in products which we lack, while it relies mainly on other foreign countries for goods which we manufacture. North America and South America should be more closely united, for the one is the complement of the other.

The prominent features of South America are its long ranges of mountains—next to the Himalayas the highest in the world,—its great valley, and its immense plateau extending from the Straits of Magellan to the Caribbean sea.

THE MOUNTAINS.

The Andes rise in the extreme south at Cape Horn, run in a northerly course through Patagonia and southern Chili; thence continuing in three nearly parallel ranges, the western chain called the Andes, the others known as the Cordilleras, through Peru,

Bolivia and Ecuador to Colombia. The Cordilleras and the Andes are connected in several places by knots or cross-chains of mountains. In Colombia the Andes turn to the northwest, reaching their lowest elevation at the Panama canal, and continue thence, through Central America and North America as the Rocky Mountains, to the Arctic ocean. Near the source of the Magdalena and Cauca rivers in Colombia, the eastern range is deflected to the east along the northern coast of South America. The central range disappears between the Magdalena and Cauca rivers.

The Andes form the water-shed of the continent. The waters on the western slope flow into the Pacific ocean. The rivers that rise on the eastern slope, in northern Peru and Ecuador, force their way through the Cordilleras and at their foot drain the montafia of Bolivia, Peru and Brazil. In the southern part of Peru and upper Chili there is a broad sierra or plateau, at an elevation of from twelve to fourteen thousand feet. The streams that rise in this sierra either empty into salt or alkaline lakes or sink into the ground.

Unlike all other long ranges of mountains, the continental or eastern side of the Cordilleras is nearly as precipitous as that extending to the Pacific. Craters of extinct volcanoes and volcanoes now in eruption are found in all parts of the chain. In Ecuador there are fifty-two volcanoes, and twenty of these, covered with perpetual snow and pebbled over by Chimborazo and Cotopaxi, rise out of a group of mountains encircling the valley of Quito, and are all visible from a single point. Three are active and five others have been in eruption at one or more times since the conquest. One of these, Sangai, is the most active volcano on the globe: it sends forth a constant stream of fire, water, mud and ashes, and some assert that it has done so without intermission for 300 years; 267 explosions have been counted in one hour. This is also the land of earthquakes: in 1808, 50,000 lives, we are told, were lost in one day; the tremor was felt over four countries and from the Andes to the Sandwich Islands. The tidal wave washed a gunboat of the United States on shore at Arica in lower Peru, 1000 miles to the south, and sixteen hours later the wave was felt across the Pacific at New Zealand.

A range of mountains separates Eastern Venezuela and Guiana from the valley of the Amazon. Other ranges south of the Amazon run southwestwardly, following the Atlantic coast line from Cape St. Roque to the Rio de la Plata.



## RIVER SYSTEMS.

A great oceanic current flows along the western coast of Africa to the equator, where it is deflected across the Atlantic ocean and becomes the equatorial current. On reaching the coast of South America near Cape St. Roque, it is again deflected north and south. Trade winds blowing over the equatorial current reach the coast at Brazil surcharged with vapor; as they follow up the valley of the Amazon the vapors are partially condensed and frequent showers refresh the land; but when the clouds at the foot-hills of the Andes meet the colder winds from the south and strike the snow summits of the Cordilleras, all the moisture is condensed, and the rain falls in tropical showers for half the year and waters the largest and richest valley in the world.

In this valley, among the Cordilleras, three great rivers—the Orinoco, the Amazon and La Plata—rise. The mountain ranges north and south of the Amazon divide this great valley into three lesser valleys, down which the Orinoco, the Amazon and La Plata flow, watering three-fourths of South America.

*The Orinoco.*

The headwaters of the Orinoco rise in two ranges of mountains; the Cordilleras in the west, and the mountains of Venezuela many hundred miles to the east. Four hundred tributaries, abounding in beautiful falls and cataracts, unite to form this great river.

The whole valley for 1600 miles is filled with dense and tangled forests. Noble trees of unrivalled beauty blossom in endless prodigality. Birds of gorgeous plumage nestle in their lofty recesses. Tall ferns, vines, creeping plants and parasites form a dense tangle of undergrowth, swarming with life. Myriads of insects in great variety, reptiles of strange and singular form, lizards and venomous serpents find their homes and sustenance in the wild, dense mass of vegetation.

*The Amazon.*

The valley of the Amazon collects its waters from a region 1500 miles wide from north to south and 3500 miles long from the Andes to the Atlantic ocean. Even at the foot of the Andes the Amazon is a mighty river. The valley rapidly narrows to a width of 600 or 700 miles, and then more gradually to the ocean;

where it is only 150 miles wide. Its total fall from the foot-hills of the Andes to the Atlantic is very slight, not over three or four hundred feet, and probably considerably less.

The rims of the valley are formed of diorite and sandstone, and are raised only a little above the flood-plain, which is formed of mud and silt, the debris brought down by the Amazon and its tributaries. The flood-plain is from fifty to one hundred miles wide, gradually narrowing as it approaches the ocean. Through this valley the Amazon cuts its way, separating often into channels which sometimes run parallel to each other for several hundred miles, frequently forming large islands, or expanding into lakes. Similar flood-plains are found on all its larger tributaries.

Up from the ocean into this valley an immense tidal wave rolls, with a bore, twice a day, forcing back the current of the Amazon 500 miles and inundating a portion of the flood-plain.

In the early autumn the equatorial rise commences in the headwaters of its tributaries, far south of the equator. The rain and melting snow raise the streams, and thence the waters of the Amazon. As the sun crosses the equator and moves to the north the rain follows its course, and the branches that have their source in the east and northeast add their flood to the waters of the southerly branches. The flood in the Amazon is thus continued for nearly six months, raising its waters from 20 to 30 feet. The channels are filled, and the flood-plains are overflowed. The whole valley becomes a net-work of navigable waters, with islands and channels and lakes innumerable, forming a great inland sea, which the Brazilians call the *Mediterranean of America*. The upland, though only a little above the flood-plain, is rarely overflowed.

The plants and animals of the flood-plain were formerly considered as distinct from those of the upland as are the plants and animals of Europe from those of America; but later investigations show that there is but little difference between the species.

The sea breeze blows up the valley about a thousand miles. Then for 1500 miles the atmosphere is stagnant and sultry; the climate is that of a permanent vapor bath. The dense foliage forms dark, lofty vaults which the sunlight never penetrates, and over all hangs a perpetual mist. The abundance and beauty of vegetation increases, and the trees which at the mouth of the river blossom only once a year, here bloom and bear fruit all the year round.



Many great rivers run into the Amazon from the north and the south, most of them navigable, for many hundred miles. The Madeira, its greatest tributary, after running 2000 miles, empties into the king of rivers, without making any perceptible difference in its width or depth.

This mighty current, rushing into the ocean, meets the equatorial current and for over one hundred miles keeps on nearly a straight course, when the stronger and mightier oceanic current deflects it to the north. At from 200 to 300 miles from land, the sea is strongly tinged, and in April and May has nearly the clay-yellow hue of the Amazon. And even further north, about 400 miles from its mouth, the naturalist on the Amazon tells us, "we passed numerous patches of floating grass mingled with tree trunks and withered foliage; among these I espied many fruits of the Amazonian palm. And this was the last I saw of the Amazon."

### *The Rio de la Plata.*

The La Plata, the outlet of the waters of central South America, is formed by the union of the Uruguay and Parana, about 100 miles from the ocean; a little lower down, at Montevideo, it is 62 miles wide and widens rapidly to the Atlantic, where it discharges more water than all the rivers of Europe. The tributaries of the Parana are fan-shaped. Its most eastern branches rise in the mountains of Brazil, within seventy miles of the Atlantic ocean; and 1500 miles away, on the other side of the continent, its most western tributaries rise only 125 miles from the Pacific.

Steamers ascend the Parana, Paraguay and Cayaba, 8100 miles to Cayaba, and the river with its branches is navigable for 5000 miles.

### *The San Francisco.*

The San Francisco, about 1800 miles long, rises near Rio de Janeiro and flows north about 1200 miles between parallel ranges of mountains, then turns east and forces its way through the coast range to the Atlantic ocean. It runs through the gold and diamond regions of Brazil, and has a considerable population along its banks. It has many falls and rapids, and considerable slackwater navigation.

## GENERAL DESCRIPTION.

In Asia, the different countries have natural boundaries; the people, soil and climate of one country are unlike those of others. In Europe there are few natural boundaries, though different races inhabit the several states.

In South America only one dominant race is found, and though natural boundaries exist, yet they do not serve as boundaries to the different states, other than Venezuela and Guiana. Venezuela and Guiana are watered by the Orinoco and by several rivers that flow from the Amazonian mountains to the ocean. The whole coast is low and fertile, but hot and unhealthy. The principal product is sugar, raised by negroes and coolies. The interior is sultry and thickly wooded; it is inhabited by Indian tribes, the principal of which are the cannibal Caribs, and by negroes as uncivilized as any of the tribes in Africa. Guiana is controlled by the English, French, and Dutch. Cayenne, the prison for French convicts, is the capital of French Guiana.

Colombia and Ecuador occupy the northwestern part of South America. They are situated on both sides of the Andes, and have every variety of climate. The country is well watered; fertile but unhealthy on the coast, fertile and healthy on the elevated plains, cold and barren on the mountains.

In Brazil, besides the Amazon, La Plata and San Francisco, there are several large rivers with fertile valleys; but occasional droughts, sometimes lasting for two years, will prevent portions of Brazil from becoming densely inhabited.

On the Pacific coast south of Ecuador, the rainfall becomes less and less. For three thousand miles along the coast of Peru and Chili there is no natural harbor; a plain from ten to fifty miles in width extends from the Pacific to the foot-hills of the Andes. The Antarctic current runs along this coast; the southeasterly winds blow over it on to the land and cool the air; but as the winds are of low temperature their scanty vapor is dissipated by the heat radiated from the land, and not a drop of rain refreshes the thirsty soil. Many mountain torrents run from the snow-clad summits of the Andes, and the beauty of their narrow valleys forms a grotesque contrast to the dry and barren sands of the plain.

In the southern part of Chili and in that part formerly called Patagonia, rain is abundant and the country is fertile.

The longest stretch of low and comparatively level land to be

found in the world extends through the center of South America. A boat starting from the Caribbean sea could sail up the Orinoco over a thousand miles, then down the Casiquiare, which runs from the Orinoco into the Rio Negro, down that river to the Amazon, out to Amazon to the Amazona, then up that river and one of its branches through Brazil and Peru, and with a short portage of six or eight miles to one of its branches

The great lake crosses the La Plata and continues so far west through the Argentine Republic and Patagonia to the Straits of Magellan. With this plain to the interior of Venezuela

Argentine Republic. The pampas resemble our prairie, but run from north to south, while the rivers run from east to west.

The streams in the plain south of the valley of the La Plata rise in the Andes and flow southeastward to the Atlantic.

### The Amerindians.

The aborigines of America, except the Esquimaux, are unlike the natives of other countries; the most marked difference is in their language. They are divided into a number of tribes differing from each other in many respects, yet with many customs and religious beliefs generally common.

In South America there are more than one hundred distinct languages, and two thousand dialects. About five or six hundred Indians have as many dialects as are found among the Esquimaux.

Their language is of a higher type than the agglutinative languages. In the polysyllabic form of the substantive, adjective and verb

expressed in a single word.

The natives in the valleys of the Orinoco and Amazon are forced to cultivate a new ground each year, as the forests are thick and impenetrable. They live principally on the fruit of the palm (of which there are five hundred varieties), cassava and bananas, fish and turtles. There are no roads or paths through the forests except the numerous channels of the rivers, either leagues or fathoms. The tribes on the pampas live principally on game and wild fruit.

Humboldt tells us that the navigator on the Orinoco met with

the trunks of these trees are suspended the habitations of a tribe of Indians, who make their fires on mats hung in the air and filled with moist clay. The same palm tree furnishes also

even the luxuries of life.

The Indian race as a whole is believed to be superior to not only the negro and the Malay, as neither of these races has ever attained to the civilization of the Incas of Peru or of the Indians of Mexico and the Aztecs of Central America. Many of their

part of the country, but also to other tribes in distant parts of the continent, and even to the regions of Africa and the Arabs of upper Egypt. All the tribes on the coast have acquired thereby the same habits of life, the same methods of warfare, the same general characteristics, and a language is in substance the same place.

From these observations it might seem that the Indian tribes in all of South America are at the same stage of civilization, but it on further examination the similarity seems to be rather to a like stage of civilization than to identity of race.

#### THE INCAS OF PERU

In crossing from Arequipa to Peru to La Paz in Bolivia, the road ascends the Andes, makes a slight descent to Cochabamba,

Tierraca, and then descends to La Paz. Lake Titicaca, the largest lake of South America, is on a plateau between twelve and thirteen thousand feet in height, the most elevated table land on the globe, excepting Tibet. This lake is surrounded by lofty, snow-capped mountains, the highest of which is Llullaillaco, 22,300 feet in height.

On this lake are the remains of the most ancient civilization of South America. Cyclopean ruins of temples and fortresses stand as forgotten monuments of a vanished culture, when and by whom they were erected, we know not; their builders left no other record of their existence. The wandering Indians told the first Spaniards that they existed before the sun shone in the heavens. From one of the rocky summits of Lake Titicaca, about the year 1000 or 1100, the sun, parent of mankind and giver of every good gift, taking compassion on the degraded condition of

Huallu Inga, to gather the wandering tribes in communities, to teach them the arts of civilized life and to introduce the worship of the Sun. From Lake Titicaca, this brother and sister, husband and wife, came to the city of Cuzco.

to found an empire. Manco Capac was their first Inca. There were ten or twelve Incas before the conquest of Peru. Their

world over four hundred tribes, with a population of many millions, been so subject to their command.

The territory of the Incas extended from the southern part of Chile northward into Colombia, beyond Quito, a distance of two thousand miles, and west to the Pacific Ocean. On the eastern slope of the Cordilleras, toward the great plain of the Amazon, the Incas met a stronger and more savage people, with whom they were in constant warfare. In the several passes of the Cordilleras they constructed fortifications to protect their borders and prevent invasion.

The summit of the territory, however, was situated on a beautiful valley not far from the sea. Although the Andes, even a quarter of the way, were buried in eternal snow, only within the tropics

Here the Incas loved to dwell, and centers of immense fortresses, palaces and temples, testifies to their power and culture, and to the number of their subjects. Thousands of thousands must have been required to construct such edifices. When we reflect that these people had no beasts of burden except the llama, which could only carry light loads, and no mechanical means for transporting the vast stacks of stone used in constructing these buildings, we are

are not more wonderful.

Great highways were built, running north, south and west, connecting different parts of the Empire. One followed the valley between the Cordilleras and Andes to Quito, another crossed the Andes and followed the sea-coast north and south to the extreme limits of their territory. As traveling was on foot, large and comfortable caravans, or *caravans*, were started every few miles, and arrived once at the end of a day's journey. They were stationed at regular intervals, each of whom had his allotted station, between which and the next it was his duty to pass at a



at station he signalled to the next runner, as the runners were ordered, to be ready to carry forward the message. In this way, it is said, about 150 miles a day were made.

These runners traveled *much* quicker than the mail-carriers of the present day.

They were far better than they are to-day. Many of these old runners are still in existence. One in which I spent the night was 160 feet in length, with rooms forming two sides of a court.

The country of the Incas had every variety of climate, and the products were those of every part of the new world. On the coast, perpetual summer reigns, with all the variety and beauty of tropical vegetation. At a higher elevation, the trees are always green, and white oak sheds its blossoms and opens

at the top of the mountain a mountain water. In some places, as at Potosi, the extremes of temperature are so great and extremes of heat and cold are experienced in a single day. The weather in the early morning is frosty; in the forenoon, mid-day, burning in the afternoon, reaching again in the evening, cool and refreshing.

On the Pacific slope of the Andes, reservoirs were constructed, from which irrigating canals watered the whole plain now lying fertile and barren.

The conquered tribes were incorporated into the nation and became the people of the Incas. If the conquered tribe was strong and warlike, some of its numbers were removed to distant parts of the country and were replaced by the inhabitants of those regions, to whom privileges and immunities were given as compensation for the change of home. The conquered tribes quickly realized the benefits of the rule of the Incas and became faithful and loyal subjects.

The government of the Incas was a paternal despotism controlling the most minute affairs of daily life. As Cabello, the Inca caught, "was not intended for the people, but for those of generous ability, for it was a tender possession of one degree of arrogance."

The Incas established a communal system similar to that of Mexico. One-third of the land belonged to the Incas, one-third to the priests of the Sun, and the remainder to the people, who were required to cultivate the land of the Incas and of the priests, as well as their own. The land was divided among the families yearly, according to their number. Every newly

married couple received a stated portion which was increased as the family increased.

The only means of writing was by a cord, called *quipu*, of about two feet long, composed of threads of different colors twisted together, from which a quantity of smaller threads hung like a knotted fringe. The colors denoted some ~~the~~ objects or

was for arithmetical purposes.

The civilization of the Incas appears to have been in a lower order than that of the Mexicans. It is not probable that hieroglyphs were in use among any of the South American Indians, though it is said that traces of a pictorial alphabet were soon found. The Incas were contented with *quipus*, at least they were deprived of personal liberty, although their duty ~~to~~ was increased by their rulers, and although they held no common rights of property. They had neither ambition nor strong love of country.

When Pizarro landed in Peru there were two Incas, one at Cuzco and the other at Quito, and the latter said that war ~~was~~ ~~between them~~ made the conquest of both easy. Pizarro

remained with this ~~small~~ force he overthrew the Incas and enslaved the people. The descendants of the Quincas, or the people of the Incas, still inhabit the *mita* mines, *spallato*, *servile* and degraded race. It is said that after the conquest the women put on a black mantle, which they have worn ever since, perpetual mourning for the loss of the Incas.

There are a few descendants of Spaniards in Peru, but the population consists chiefly of the descendants of the Quincas and mixed Spaniards and *Chichus*. The Peruvians of to-day are everywhere that those who lived ten years ago; they are less worthy and are poorer.

#### DISCOVERY OF THE AMAZON

Great rivers have recently been discovered and explored by ascending them from the ocean to their sources, the Congo and the Amazon were explored downward from their sources to the

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Three hundred and fifty years ago ~~Columbus~~ Pizarro, then governor of Upper Peru, heard of a mine of silver and gold,

tropical fruits abundant. He determined to follow the high

to explore the country and find our happy land. He set out with Indian slaves.

The first part of the route was easy; the little stream soon became a river, then broadened into the Napo; but the farther

pieces of the Andes into the narrow valley of the Napo. Their

travels than those described by Stanley, for the valley of the

ruled by death and by desertion of the slaves.

The natives told them of a greater river than the Napo which they would find a few days' voyage farther down. This river,

where food was abundant and gold was found in every stream. Piratti determined to build a bark and to send Abraham as commander to find and return with food and slaves. For this

were converted into guns, distilled gum was used for pitch, and the garments of the soldiers were a substitute for ankam. In

that river flowed on the waters of the Amazon. The Napo grew

they saw before them a river, many times larger than the Napo, which the Indians called Parana-tunga, King of Waters of the Amazon. There was no civilization, little food could be

was to be seen? Behind them was the wilderness, before them the promised land. The journey back would be a threat and dangerous; the temptation to explore the wonderful river was

he was left on the bark while Abraham sailed down the river. The wonder of the explorers daily increased as other rivers larger

frequently on the south. Month after month passed, the river

which seemed larger than any river they had ever seen. 5000

(Aman. Then they sailed north in their little boat, skirting the coast to Trinidad, where they found a vessel which bore them to Spain. They recounted the story of the great river; the wonderful country through which they passed; and the rich mines of which they had heard. They told fabulous tales of the Americans they had encountered, strong and masculine women, armed with bows and arrows, living by themselves, and adding even to their country only one month in the year.

Fig. 1.  $\gamma$ -ray emission spectrum of  $^{238}\text{Pu}$ . Wattmire.

Chetano was received by the Queen; his treasury was for gotten and a new expedition was sent out at her command but he died before reaching the river.

the American Consul has, after days' delay, looked in vain for their companions, but found only two solitary men who had been left to sail, scarcely alive, and from them learned of Gooding's disappearance. Further explorations being impossible,

their horses gone, their arms broken or rusted, the skins of the animals their only clothing. "The summer house seemed to have given up its soul, as they passed toward one a troop of 'squaws.' Half of the Indians had perished, and of the three hundred and fifty warriors only eighty were left.

Such was the end of an expedition which, for dangers and  
 big game, held in the annals of American discovery.

1 2 3 4

the Latin race. It was required for Great Britain by one who  
with which his own country was at peace.

Genzale Pizarro, on his journey down the Napo in 1639, heard

with a globe of a piece of Guiana whose body, first smeared with turpentine, was then powdered with gold dust, so that he stood among his people a majestic golden statue. Adventurers started in search of the El Dorado, some from Peru, some from Quito and from Trinidad; but the golden city was never found. They, however, brought back reports of chiefs whose bodies

glistened from their breasts and great joints like their skin,

longed to exchange these jewels for jewels larger.

Sir Walter Raleigh determined to find this mystery and to see to it that its fabulous riches, for he believed that the silver and gold mines of Mexico and Peru had made Spain too first

and powerful and invulnerable and disturbed all the nations of Europe."

In 1595, Sir Walter sailed from England and arrived at the Isle of Trinidad, where he overthrew the Spaniards, then sailed up the Orinoco, to one of its branches, four hundred miles, but his great sickness compelled him to return. Although he did not reach the golden city, he could see the mountains far in the distance and of the river he concluded it, and he found the sugar sand on the banks of the Orinoco. In Trinidad he raised the

order.

order to make a second voyage in search of this El Dorado for King James. He sailed in 1617, accompanied by his eldest son, but disaster and sickness met him at every step. He reached the river again, too feeble to land. Sir Robert and Captain Heyrick went instead. Heyrick returned after a month of exploration, bringing Raleigh the news of the death of his son in an attack on a Spanish town. He brought reports of the golden city,

Raymond not credible to confirm the truth of these reports. Raleigh said, "I am undone;" Heyrick replied, "I know the way, Sir, what course to take." He went to his cabin and killed himself.

Raleigh returned to England, a broken down old man. The



Elizabeth had refused, but James yielded. Raleigh was executed, but his idea became an English colony.

The gold and silver mines of Peru have failed; little gold has been found in Canada, but its rich and fertile soil, watered by tropical rains, has been a source of greater wealth than the great mines of Peru.

#### POPULATION OF NORTH AMERICA

The population of North America were all settled at about the same time and by the same race and have passed through a like history, they can be considered as a whole.

The United States and Canada, with a rough, uncongenial climate and sterile soil, were settled by the Anglo-Saxons, the remainder of the western continent by the Latin race and, excepting Brazil and Guyana, by Spaniards. In North America the

Anglo-Saxons have been the dominant race, and have made the most rapid progress.

The Latin race conquered Central America and South America, and have made the most rapid progress.

The Anglo-Saxons have been the dominant race, and have made the most rapid progress.

state but not a layer over a scarcely populated country. Their colonies were not of unbounded ambition, rapacious, of great enterprise, but cruel and unscrupulous. They sought a venture, expecting it would bring them gold and silver. For that end they plundered, tortured and enslaved the Indians. Gold and silver flowed into their hands; luxury, effeminacy, and weakness followed.

The Spaniards in America have scarcely retained the civilization they brought from the old world. They have intermarried with the Indians, and have created races used to follow the vices of each of their ancestors without the virtues of either.

Some twenty miles in depth along the coast of South America, from the Bay of Panama to the Caribbean sea. At the cities and settlements, ever since a few to the Argentine Republic, are near the coast.

Back of this zone, on the Pacific, is a mixed Spanish-Indian population, and a few scattered settlements.

Negro, and Negro Indian, occupies a zone from twenty to one

hundred leagues, and foreigners are found at the gold and silver mines, on the pampas, at the cattle ranches, and on a few haciendas in

and Germans raise coffee and sugar, and oversee the diamond and gold fields. On the Amazon there are a few small settlements to collect the Indian rubber and canoe of that valley.

Save these sparse settlements, the interior of South America is inhabited by wild tribes of Indians, unchristianized save for the presence of a few Catholic priests, who have given the Indians the cross and the image of the Virgin Mary, which they worship

ignorantly. The natives are believed to be more civilized and more civilized than when the Spaniards discovered America.

The Spaniards are the grandees of the country; too proud to

Indians, retaining in contempt with the half breeds and partial power. When the viceroys appointed by Spain were expelled

but they were republics only in name; the people were neither educated nor fitted for self-government. Their pretensions generally exceeded the powers of dictators and often assumed that title. They have rarely enjoyed a long reign, for their power and ambition were sought by others. Revolution in these countries has passed from the scene to the electric stage.

A recent traveller in Peru, who wished to inspect its rebellious provinces, found that only 20 miles were a running order, the remainder being under the control of the rebel generals who were then less than 80 miles from the capital. He asked why he rebelled and take Lima, the capital, and was told, "because there is no unanimity among them; they are suspicious of each other, and cannot depend upon any one man." Instead of being anxious to serve their country they are only interested in robbing her.

Another traveller in Bolivia, who witnessed some of these revolutions, says they sometimes occurred three times in as many

The basis for this course is that the white population will take care and develop themselves in connection with the country, they will then take an active interest in politics and direct the policy and administration of the government.

Commercial and banking business is in the hands of the French, Germans, and English. The Latins carry on a small trade at smaller groceries and fruit stores; the French keep the hotels and restaurants; the English and Germans are the shippers, merchants and bankers.

Regular lines of English, French, and German steamers run from Europe to Panama and thence along the western coast of South America, stopping at ports en route; some return by Panama, others sail around Cape Horn to Europe by Boetia Ayres and Rio Janeiro. Other lines run direct from Europe to Brazil, and twenty-four lines connect Europe with the Argentine by sea; but the only two are only four lines of American steamers trading to South America.

We have given a general description of South America, but three countries—Brazil, the Argentine Republic and Peru require further notice; Brazil, because it is the largest country occupying the western portion of South America, and the only considerable state that was not seized by the Spaniards, the Argentine Republic, because it is the largest and most populous of the South American states.

It passes through which the Spanish royalties have passed.

The valley of the Amazon makes fit and the most fertile region of the world. The tropical woods are so thick and the creepers and undergrowth so luxuriant that animal life is almost entirely confined to the trees above and the waters below.

The vast Amazonian waters. Beyond the valley is the mountain district, where the land is higher and the climate semi-tropical, where there are few creepers, little undergrowth, and open forests, and where both animal and vegetable life is more abundant.



branches. Although the country has many long and navigable rivers, the country is almost entirely inaccessible by water. The soil is everywhere so unproductive, and even if roads should be opened the soil is so unproductive.

Lines of steamers have been purchased by the Brazilian Government, and the boundary line of Peru; these connecting with those of Peru up the river. These vessels carry supplies to the settlers and bring back in the reverse. Brazil-wood, sugar, quinine, and the useful woods of the forest.

Yet steamers are rarely seen on the Amazon; they have few passengers, and the Amazon carries more vessels in a day, than the Amazon in a year.

### THE ARGENTINE REPUBLIC.

The history of South American republics is illustrated in the Argentine republic.

It is a vast prairie or pampa, extending from Brazil to the Andes, and from India with a northeasterly trend of 200 miles to the Pacific Ocean of Peru.

The climate of the northern part is tropical, and the central part, semitropical; of the entire country, temperate or cold. The country is a narrow strip watered excepting in the northern part, where the land is dry and sandy, like the prairies of North America. The soil is a rich, deep loam, from four to six feet in depth, excepting in the northern and the western pampas, where there is a coarse gravel and drift from the Andes. Instead of the dense tropical forest of the Amazon valley, the pampas are covered by a coarse grass, three or four feet high, growing in large tussocks and all the year round of a dark green. The strong grass crowds out all trees and almost all plants, so that scarcely a flower relieves the uniform, everlasting verdure.

Instead of the arched animals of the Amazon there is the race of American ostrich, "ship of the wilderness," adapted to the



pasture, but unable to live in the forests. The gauchos have hunted it for the last three centuries, but it is now passing away and will soon be lost to the pampas, as the Indians have been to the North American prairie.

The pampas are far better adapted to the raising of cattle than the prairies, for the grass is always green and the winters are milder. Cattle, horses, and sheep are reared by the Argentine

herds feed on the plants

hauling the richest and cattle. The cattle are tended by gauchos, as the cowboys are called, half breeds as wild as the herds they tend. Constant warfare exists between the Indians and the gauchos, unless they unite to attack the settlers. After one of the wars the Indians were driven to the farther side, and since then there have been fewer raids—and fewer Indians.

The land was held in large blocks of many thousand acres, worked by overseers and gauchos. The animals were killed by hundreds of thousands for their skins. This slave of things is, however, now fast passing away, for during the last twenty years immigrants from the old world have settled in the country as farmers and planters.

The fourteen provinces which form the Argentine Republic have never been welded into one nation, and have each their moment's people. The gauchos have been a constant scourge, and the gaucho generals as robbers and harpers combined. Unfor-

another. Three presidents, or dictators, have reigned within fifty years. At one time five provinces had each a separate dictator. The neighboring republic of Uruguay, formerly a part of the Argentine, was independent from 1828 to 1842.

For some time Buenos Ayres and its dictator ruled the republic, then the country provinces rebelled, and civil war ensued,

the first time Buenos Ayres was defeated. The provinces then elected a president, but he was soon overthrown, and the provinces

Money was required to pay the army and the cost of civil as well as war. Every dictator had his friends for whom protection must be made. Large debts were created; banks were created; \$200,000,000 of paper money were issued. There were several different currencies: each province a currency outside the others in the name of a currency which quickly depreciated. Companies for different purposes were organized, and many were subsidized, directly or indirectly. We are told that in one case \$1,500,000 was paid for a concession, and that "for high officials, who have hitherto been the champion artists in

colonel of pastures at Olata."

The routes were built radiating from Buenos Ayres in different directions, as each province demanded a railroad, with little regard to its population or business.

A road was commenced to cross the Andes and open communication between the Atlantic and Pacific over it, and as which had never been crossed by a carriage of any kind.

The country was not settled so rapidly as the rulers desired. Indemnities were therefore offered to immigrants. The passage money from Europe and the expenses of the immigrant to his

country during the last twelve years, and the proportionate increase

in the United States. Grazing lands have been sold at nominal prices to immigrants, or leased for terms of years in parcels of 10,000 acres at a rental of \$1.00 a year. Lands were leased not only to the government but by the provinces, by the towns, cities and

land, the owner of real estate on depositing his title deeds with the hypothecary bank and paying a valuation of his real estate, received cedulas, or bonds of the bank, for one-half its appraised value, these cedulas for large amounts were issued

was increased 120 per cent., and it is now said to be over one

interest of two-thirds of the amount is payable in gold at a premium of 20 per cent.

In 1881 there was no money to meet the interest and principal  
 payment due.

greater in proportion to its population and wealth than that of

Russia, is to wipe out the debt by insolvency and bankruptcy.

### Peru

A strip of land with 1200 miles of sea coast, without a natural

platform, and still another range of mountains—this is Peru.

To the west, where the rain never falls, are numerous streams,  
 rivers, today swarming with fish, tomorrow dry, rocky beds.

Between the lofty ranges of snow mountains is the largest  
 plateau in the world, after Tibet. The southern part of this  
 plateau is dry and desolate, the northern portion is well watered,  
 with beautiful streams running now through deep canyons and  
 then through rich, fertile valleys steadily descending toward  
 the northeast; the valleys growing ever broader, warmer and  
 more delightful, until the mountains are reached, only a few hundred  
 feet above the Atlantic, where the streams have become rivers,  
 navigable to the ocean.

The western slope of the mountains is dry and barren, so that  
 minerals and provisions are imported from elsewhere in the  
 north, or from abroad to, far to the south. Yet no other country  
 is so abundant so much to the world's fertility; for here are the  
 great deposits of guano and nitrate, more valuable than mines of  
 gold and silver. These deposits have for over thirty years a net  
 worth of over one hundred millions.

The eastern slope, rich and fertile, producing every tree and  
 flower, and fruits and vegetables grown in any part of the world;  
 in the mountains, mines of gold and silver, platinum and  
 nichel, copper and tin lead and iron, coal and petroleum,  
 nitrate and guano—a bankrupt nation in the midst of wealth  
 and the richest Peru.

For long the mountains down to the coast, lines of iron lines of  
 India were established on mountain top by but the high none of them  
 was ever finished, they reached a few of the poor mountain. Seven  
 of these roads were built by the government, the others by private  
 parties.

For sales of granite and the production of gold and silver made Peru a proud and wealthy nation. Peruvia prospered

part of her granite exports. She was enabled to keep her railroads in operation, and to have to extend them, or to pay the interest on the bonds. But a bankruptcy forced default. At last, after fourteen years of default and six years of negotiation, a treaty was concluded with Peru by Mr M. P. Grace, of New York, in January, 1890, on behalf of the bondholders. The bondholders became concessionaires, and in return had the release of the bonded debt due to them by Peru, twelve various concessions, of mines, of railways, of lands and of granite. These concessions include among other things a government monopoly of \$4,000,000 a year, secured from the customs of Callao; the mines of Cerro de Pasco, which have yielded a yearly average of \$2,000,000 for over one hundred years; the entire railway system (1600 miles in length) of the state, a grant of 7,000,000 acres for the irrigation of the Lake Titicaca in 1901, a grant of 4,500,000 acres for the extension of the Central or Oroya railway to the navigable waters of the Tenzana, one of the main tributaries of the Amazon; the exclusive control of the guano deposit and 2,000,000 tons have been sold, from which they expect to win at least \$3,000,000 a year, which will be \$10,000,000. The concessionaires in their joint agreement stipulated that Peru must be to repair the railways, and to pay 2 per cent of the interest on the bonds, and to assume certain other obligations, the amount.

Thus, perhaps the most remarkable settlement ever made between a bankrupt nation and its creditors, a due largely to Mr Grace, and which had led to the resources of Peru and restored her ways of prosperity.

#### PERU'S TREATY WITH THE UNITED STATES

It appears from the foregoing statement that the carrying trade to and from South America by water, is by far the most important; that only four of these are American lines; that the trade could be greatly increased and controlled by Englishmen; that the interests and capabilities are being shown in Germany; that

many of the mines, cattle ranches, coffee plantations and other estates are owned by non-resident foreigners; and that the largest consumer of South American products is the United States.

to South America.

The English steamers, on the usual course of trade, load with

products, which are sent in the same vessels to the United States; there sold, and the money invested in our produce for carriage to England. The English therefore obtain the profits on manufactures, on the freight to South America, on the sale of the goods in South America, on the freight from South America to the United States, on the sale of those goods, and finally on the freight of the American boats to Europe. But the successful prosecution of any trade between two countries, it is essential that each shall produce what the other wants. Thus, we raise breadstuffs which are not grown on the Argentine and not in the

of Peru or upper Chile, in which we also manufacture goods required in all parts of South America, where they have few factories; there, coffee, wool, llama rubber, sugar and other articles are produced, which we require. Here, therefore, are the factors necessary for a prosperous trade. Such a trade we formerly enjoyed with South America. In 1854, one hundred United States vessels entered the harbor of Buenos Ayres, or more than twice as many as those of all other nations combined; now only two per cent. of the shipping entering that harbor belongs to us. Our war came, iron steamers took the place of wooden sailing ships, we raised a duty on rubber and rubber, South America levied a duty on our manufactures, other countries subsidized lines of steamers, while we refused subsidies; and our trade with South America rapidly fell off, as freights were carried, even for foreigners, than in American ships, and the trade of South America passed from the United States to England, Germany and France.

It is said that we cannot regain this trade, because we cannot without protection maintain our own manufactures, much less compete with the Europeans in an open market; and therefore that it will be a waste of money to subsidize our vessels. But the larger the market the easier we can manufacture, and we can



happily find a large and new market for our breadstuffs. It is worth while to make the experiment at least, to give our vessels the same subsidy and protection that has been given to the fisheries. It is worth while to make the experiment at least, to give our vessels the same subsidy and protection that has been given to the fisheries. It is worth while to make the experiment at least, to give our vessels the same subsidy and protection that has been given to the fisheries.

It is now proposed to tax the products of South America, at least the South American states respectively and admit our bread-stuffs and manufactures free. If this scheme can be carried out, a large and prosperous commerce will be established between North America and South America, and American houses will be started in the large cities to dispose of our own factories and ship the produce to South America. By this means, our products, our merchant navy freight for its vessels, and our bankers and merchants a profitable business in the large cities of South America.

We have already referred to the several railroads which start from the northern portion of the Pacific coast and run up the valleys toward the Andes. Three of these, among the most remarkable roads in the world, ascend to a greater elevation than any others, and to a height which in Europe or the United States, would be above the snow level. They were intended to reach the gold and silver mines between the Andes and Cordillera.

The first, called the Uroya or Central railroad, 11 miles in length, starts from Callao on the Pacific, and crosses the Andes by ~~the~~ <sup>a</sup> ~~tunnel~~ <sup>pass</sup>. It is expected that this road will be extended to the navigable waters of the Amazon.

Three hundred miles southward, the second road runs from Madero, Perm., by Amargosa to Pecos on Lake Tularosa, then thence northward on the present 407 miles to San Raza, on the route to Tucson. The road from Madero to Amargosa runs through a country so destitute of water that the only supply for

seasonal.

Seven or eight hundred miles south of Mollendo, a line runs from Valparaiso in Chile to Buenos Ayres, 27° in lat. It crosses the Andes through a tunnel two miles long, at an elevation of 11,868 feet above the sea; after leaving the mountains it runs

over three feet above or below the plain, and will soon be completed from ocean to ocean.

From Rio de Janeiro several roads have been constructed over the mountains west of that city to different parts of Brazil. One of these runs westwardly toward Bahia.

a road from La Paz to connect on the west with the Peruvian road at Lake Titicaca, and on the east with the Brazilian road on the Pacific, and it is ultimately a road will run from Mollendo on the Atlantic ocean by Lake Titicaca and La Paz to Rio de Janeiro.

There are now from north to south miles of roads in operation in the Argentine Republic, 3,000 to 4,000 in Brazil, and 3,000 to 4,000 miles in the other states, making a total of about 15,000 miles of railroad in operation.

A project is now before the public for the construction of the Pacific American railway, from the Gulf coast sea coastward to the Argentine Republic to connect with the Peruvian, with the Brazilian, and ultimately with the Argentine roads.

The route that seems to be most feasible starts at Cartagena where there is a splendid bay and harbor, with three narrow gauge railroads, and six lines from New York. It follows the valley of the Magdalena river 800 miles to Bogotá, 1700 feet above the sea. Here, near the head waters of the Magdalena, the route crosses the eastern cordillera at an elevation of about 6,000 feet to the head waters of the Guaviare, or Vaupés, a branch of the Amazon, and thence runs down that river 275 miles to the mouth of the Foz de Ica, only 500 feet above tide water. From

the Foz de Ica river, the route passes through Ecuador to Santos, Peru, crossing several tributaries of the Amazon. From Iquitos it is due to cross the Amazon and the Ucayali, one of its southern tributaries, 50 miles to Napo, then continue across the moun-

and the numerous valleys of the Amazon about 300 miles, to Santa Cruz in 14 days, or 2400 miles from Cartagena; while a branch will run up the Viceroyalty of Guayaquil.

This road would cut for 2000 miles along the foot hills of the

region in the west; here gold, silver, copper, lead and iron mines are found. The gold and silver mines do not seem to have

metals have been extracted from them. These mines are generally in cold and treeless regions, where men, labor and food are difficult to obtain; where freights are high and machinery

the opening and working of these mines, and not only make them profitable but drive up a large profitable traffic.

Much of Bolivia is above the influence waters of the Amazon, and much of its provinces are now landlocked and almost isolated from communication with the outer world. The proposed road would cross many branches of the Amazon, and it is connected with fifty thousand miles of navigable waters, at least some of which are above the equator; and it is claimed that the business from 2000 miles of navigable waters would find by this route a nearer outlet to Europe and America than by Peru.

There is every variety of climate on the route. The river of the Magdalena is subject, every afternoon the water grows rapid and the steam is rising out in the same place. In crossing the Cordillera the snow-covered peaks of the mountains are seen. The road then ascends to the valley of the Amazon, the soil is rich and the climate is temperate, though it has the humidity of a tropical country, and thence passes through the mountain district, which is generally high, hilly and sterile.

This country, under a wise government, would do of what it has an immense population and giving abundant support to such a railroad; but it is now neglected, excepting the valleys of the navigable rivers, and is inhabited save by wild and savage Indians, though these are not numerous.

The route up the Magdalena may be expensive by reason of the steepness, but not otherwise. The road in the mountain district will necessarily be rocky, and also in the valleys, because it must

ing labor and material for construction. Mr. Hinton, who crossed from one branch of the Napo to another, an

"We crossed the stream and the intervening ridges, and then after a high mountain we were climbing up to a great vertical ascent, then descending into a deep dark ravine to find a fine river. While on the lowlands the path we used led to a dense jungle, until the Indians opened a passage with their machetes and we crept under the low branches of the trees."

Even if the railroad were built, almost all the produce of the Amazon would be carried by water to Para than by rail to Cartagena; while goods from England and America would be carried cheaper by steamer to the isthmus of Panama, and thence to all ports on the Pacific

the Andes to the valley of the Amazon, and then a second time across the Andes to the Pacific ocean. The greater part of the business to and from the north would be by the railroad.

At present, no there could not be sufficient business to pay the operating expenses of such a road, if it were a government enterprise to build and operate it.

Those who have given the most consideration to the subject say that the road would be an expensive one to operate, and in an important element of time it would have a great advantage over the route via Para. As a means of promoting the settlement of the country and developing commerce, which cannot be without population, the railroad would seem to be a means for navigation has not yet opened the country has brought immigrants and we can fairly assume that it will not suffer in the future.

In conclusion I will quote from two writers on tropical America. Huxley says:

"Amidst the stupor and splendor of nature, no place is left for man; he is not only insignificant by the majesty with which he is surrounded. The forces that oppose are so formidable that he has never been able to make head against them.

The creation of nature here conquers his spirit, nowhere else is the contrast so painful between the grandeur of the external world and

struggle. The best chance for success

is to win the physical struggle the most powerful. When vegetation is not so abundant as it is now, and is covered by the soil, the soil is not so rich as it is by the soil. The production of nature has increased in all regions and especially the abundance of wealth we see it in all regions is increasing.

Mr. Bates, the naturalist, after a residence of many years on the Amazon, writes in his book as follows:

"The superiority of the black man to tropical regions is only in its mental aspects, for I hold to the opinion that a thorough humanity can only be attained in the tropics. It is for the equatorial zone that the perfect race of the future will attain its complete freedom of development. Because, the earth."

Washington, January, 1891











